REMARKS/ARGUMENTS

The Office Action mailed December 2, 2003 maintained its rejection of claims 11 and 13-15 and 16 under Section 103(a) as unpatentable over Jao in view of Andreiko et al. (USPN 5,683,243). Additionally, claims 1-10, 12 and 16-25 were rejected over the same references. As detailed below, Applicants traverse the Section 103 rejections and submit that all claims are in condition for allowance.

The office action noted that Jao does not show aspects such as receiving patient data from an input form and validating the dental patient data in a predetermined sequence. The Office Action asserted that "Andreiko suggests an engine adapted to receive the dental patient data in a predetermined sequence." Applicants respectfully traverse this assertion.

As discussed on pages 14-15 of the instant specification, one embodiment the engine of the present invention performs a validity check of the diagnostic entry (step 358). The entered data can be crosschecked against case selection criteria to ensure that the submitted case is acceptable for treatment. In one embodiment, the answers from each question prompt specific subsequent questions. For example, when a treatment goal input is given, the system checks that the input is compatible with previous diagnostic input, that the treatment goal is realistic with what is deemed acceptable, and that the treatment goal is compatible with other previously entered treatment goals. The data that has been input will generate further questions, and eliminate possible questions that do not have to do with that particular patient. In other embodiments, specific questions are generated to guide the doctor through a plan for how to get the teeth from their start to end position. The system then performs a validity check of the treatment plan entry (step 366). This validity check ensures that the doctor does not enter two incompatible answers that would involve the teeth running into each other, or not heading in the direction of the goal, among others. In another embodiment, the engine generates a summary for review by the doctor to allow the doctor to review all of the entered data and ensure that it is in accordance with what he intended.

The attached Appendix of the application provides yet another example of one embodiment of the engine adapted to receive the dental patient data from the input form and validating the dental patient data in a predetermined sequence:

The Office Action cites to Andreiko's Col. 21, lines 48-Col. 22, line 56 as showing the claimed data receiving/validating engine. This section is reproduced below:

(94) Input Procedure:

In the input procedure (90) is illustrated in the flowchart of FIG. 2A. In the procedure (94), the received information 16 is input, in the illustrated embodiment by operator 28 at the design facility 13, into a computer 30 in digital form. Even where the inputing is performed by operator at the design facility 13, some information 16, such as the information 17 and 19, may be supplied by the orthodontist 14 in machine readable form and input directly into the computer 30. The input procedure (94) includes five steps (100)-(500), the substeps of which are described in detail in connection with the flowchart details of FIGS. 2E-2I below. The steps of the input procedure (90), in the illustrated embodiment, also include certain substeps that are part of the function of the analysis step (92) but are more conveniently performed at the time of the information is entered into the computer.

The input steps (100) and (200) involve the entry of background information assembled by the orthodontist 14. In the input steps (300), (400) and (500), tooth and jaw positions and profiles are defined in terms of orthodontic parameters and landmarks that can be later analyzed by computer to best implement the orthodontic knowledge, skill and experience embodied in the prescription 27 and of the orthodontic profession while efficiently automatically producing a optimum result. These steps of the input procedure (90) include:

(100) The inputing of the doctor-patient identification information 17 in digital form into the computer 30a:

This information is used to identify the records of the patient and the products produced.

(200) The inputing of patient background information 19 in digital form into the computer 30a:

This information is used in part in the calculating the finish position of the patient's teeth in accordance with genetic characteristics. Sex and race, for example, are used to assign certain seed values such as the inclination of the

axes of the individual teeth of the patient 12 to an arch plane in step (625), which is used to determine an offset for tips of the teeth from the jaw bone or gum line.

This information also includes diagnostic determinations and treatment option decisions made by the orthodontist 14, such as determinations to extract teeth, or employ optional treatment norms.

(300) The inputing into the computer 30, from a top view image of the patient's mandibular model 21, the mandibular jaw shape and tooth dimensional information:

In implementing a treatment to correct the tooth alignment of the patient 12, the mandible 22 is the logical starting point because it is a solid bone and has relatively little pliancy. By contrast, the maxilla or upper jaw 24 is composed of segments held together by sutures which do not fuse until mid or late teens. Furthermore, these sutures can be separated by the orthodontist even after the point of initial fusion by simple and commonly known clinical techniques. These anatomical factors require that the orthodontist 14 make relatively small changes in the mandibular bone 22 and the preponderance of skeletal changes in the maxilla 24. For this reason, the position of the mandibular trough MT therefore taken as a constraint on the positions of the roots of the lower teeth.

In step (300) information is input for use, in part, to define from the patient's lower jaw bone the shape of the mandibular trough MT, which serves as the first constraint in arriving at the finish position of the teeth. In one embodiment, this is accomplished by superimposing a predefined grid G on a video or graphics image of the mandibular trough (from FIG. 3) in the manner illustrated in FIG. 4. In addition, the distances between the mesiodistal extremities, or mesiodistal widths MDW, that is, their contact points with adjacent teeth, in a horizontal plane, are input. These determine the total length of the dental arch and the relative center-to-center spacings of the teeth along the arch.

Nowhere in the cited section does it show the "an engine adapted to receive the dental patient data from the input form and validating the dental patient data in a predetermined sequence." At best, the Andreiko input steps "involve the entry of background information assembled by the orthodontist 14. In the input steps (300), (400) and (500), tooth and jaw positions and profiles are defined in terms of orthodontic parameters and landmarks that can be later analyzed by computer to best implement the orthodontic knowledge, skill and experience

embodied in the prescription 27 and of the orthodontic profession while efficiently automatically producing a optimum result." The Office Action needs to point out specifically in Andreiko where data validation is performed, or the rejection should be withdrawn.

In the instant case, since Andreiko lacks the data validation engine, Andreiko neither anticipates nor renders the invention obvious. Withdrawal of the §103 rejection is respectfully requested.

In view of the foregoing, Applicants believe all claims now pending in this Application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 650-326-2400.

Respectfully submitted,

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